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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,294	09/16/2003	Tadashi Amada	02887.0249	4299

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EXAMINER	
CHAU, COREY P	
ART UNIT	**PAPER NUMBER**
2615	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/662,294	AMADA ET AL.	
	Examiner	Art Unit	
	Corey P. Chau	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/12/06,4/14/04,9/16/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claim 20 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

With regards to Claim 20, Section 101 of title 35, United States Code, provides:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 20 disclose "A directional setting program". Computer programs claimed as computer listings per se, i.e. the descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized. Since a computer program is merely a set of instruction capable of being executed by a computer, the computer itself is not a process.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5 and 7-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagai et al., "ESTIMATION OF SOURCE LOCATION BASED ON 2-D MUSIC AND ITS APPLICATION TO SPEECH RECOGNITION IN CARS," (hereafter as Nagai).

5. Regarding Claim 1, Nagai discloses a directional setting apparatus, comprising:

a voice recognition unit which detects a certain voice included in a sound signal outputted from a microphone array having a plurality of microphones and a directional determination period indicating a detection period of said certain voice (Figs. 1 and 4; pages 3041 and 3043);

a voice direction detector which detects occurrence direction of said certain voice in said directional determination period (Figs. 1-2 and 4; pages 3041-3043); and

a directional controller which controls directivity of a prescribed apparatus based on the sound signals inputted from said plurality of microphones in said directional determination period (Figs. 1-2 and 4; pages 3041-3043).

6. Regarding Claim 2, Nagai discloses said directional controller controls the directivity of said prescribed apparatus, based on the sound signal which is generated by delaying the sound signals outputted from said plurality of microphones in said

directional determination period with locations of said microphones and the amount of delay based on the direction of arrival of the sound signals and adding the sound signals to each other (Figs. 1-2 and 4; pages 3041-3043).

7. Regarding Claim 3, Nagai discloses a detection result storage which stores directional data indicating occurrence direction of said certain voice detected by said voice direction detector, wherein said directional controller controls directivity of said certain apparatus based on the directional data of said certain voice in said directional determination period, among the directional data stored in said detection result storage (Figs. 1-2 and 4; pages 3041-3043).

8. Regarding Claim 4, Nagai discloses a sound storage which stores said sound signal, wherein said directional controller controls directivity of said prescribed apparatus based on said sound signals in said directional determination period, among the sound signal stored in said detection result storage (Figs. 1-2 and 4; pages 3041-3043).

9. Regarding Claim 5, Nagai discloses said prescribed apparatus is said microphone array; and said directional controller controls the directivity of said microphone array based on the detection result of said voice direction detector (Figs. 1-2 and 4; pages 3041-3043).

10. Regarding Claim 7, Nagai discloses said voice recognition unit detects said certain voice included in the sound signal outputted from a prescribed microphone among said plurality of microphones (Figs. 1 and 4; pages 3041 and 3043).

11. Regarding Claim 8, Nagai discloses wherein said voice recognition unit detects said certain voice included in the output of said directional controller (Figs. 1 and 4; pages 3041 and 3043).

12. Regarding Claim 9, Nagai discloses said voice direction detector detects occurrence direction of said certain direction based on a result of repeating the detection of occurrence direction of said certain voice by a plurality of times (Figs. 1 and 4; pages 3041 and 3043).

13. Regarding Claim 10, Nagai discloses said directional determination period is a partial period in detection period of said certain voice (Figs. 1-2 and 4; pages 3041-3043).

14. Regarding Claim 11, Nagai discloses said directional determination period is a period within a detection period of said certain voice and in which voice level of said certain voice is not less than a prescribed level (Figs. 1-2 and 4; pages 3041-3043).

15. Regarding Claim 12, Nagai discloses said directional controller can individually control the directivities of said plurality of microphone, respectively (Figs. 1-2 and 4; pages 3041-3043).

16. Regarding Claim 13, Nagai discloses said directional controller supplies a sound signal obtained by combining the sound signals outputted from said plurality of microphones to said voice recognition unit without control of the directivity, when said voice recognition unit detects said certain voice at fist time, and controls the directivity of the sound signals outputted from said plurality of microphones based on the prior detection result by said voice recognition unit to supply the sound signal to said voice

recognition unit, when said voice recognition unit detects said certain voice at second or more times (Figs. 1-2 and 4; pages 3041-3043).

17. Regarding Claim 14, Nagai discloses said voice recognition unit detects multiple types of said certain voices and a plurality of said directional determination periods corresponding to these certain voices; and said directional controller independently controls the directivity of said prescribed apparatus based on the sound signal outputted from said plurality of microphones in said plurality of directional determination period (Figs. 1-2 and 4; pages 3041-3043).

18. Regarding Claim 15, Nagai discloses said voice recognition unit detects a voice indicating a setting of a certain directivity and a voice indicating a setting release of said certain directivity; and said directivity controller suspends the directional control of said prescribed apparatus when said voice recognition unit detects the voice which indicates setting release of said certain directivity (Figs. 1-2 and 4; pages 3041-3043).

19. Regarding Claim 16, Nagai discloses said directional controller releases setting of said certain directivity, and controls directivity of said prescribed apparatus based on the detection result of a new certain voice when said voice direction detector detects occurrence direction of the new certain voice, before said voice direction detector detects the voice indicating the setting release of said certain directivity (Figs. 1-2 and 4; pages 3041-3043).

20. Regarding Claim 17, Nagai discloses said certain voice is a voice including a meaningful certain keyword (i.e. Applicant has not clearly defined meaningful certain keyword in the claim, which the examiner can interpret this limitation in any manner

consistent with the limitation, such as voice or speech) (Figs. 1-2 and 4; pages 3041-3043).

21. Regarding Claim 18, Nagai discloses a directional setting system, comprising:

a microphone array having a plurality of microphones (Figs. 1-2 and 4; pages 3041-3043);

a voice recognition unit which detects a certain voice included in a sound signal outputted from said microphone array and a directional determination period indicating a detection period of said certain voice (Figs. 1 and 4; pages 3041 and 3043);

a voice direction detector which detects occurrence direction of said certain voice in said directional determination period (Figs. 1-2 and 4; pages 3041-3043); and

a directivity controller which controls directivity of a prescribed apparatus based on sound signals outputted from said plurality of microphones in said directional determination period (Figs. 1-2 and 4; pages 3041-3043).

22. Claim 19 is essentially similar to Claim 18 and is rejected for the reasons stated above apropos to Claim 18.

23. As best understood with regards to the 35 U.S.C. 101 problem mentioned above, Claim 20 is essentially similar to Claim 19 and is rejected for the reasons stated above apropos to Claim 19.

Claim Rejections - 35 USC § 103

24. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

25. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai et al., "ESTIMATION OF SOURCE LOCATION BASED ON 2-D MUSIC AND ITS APPLICATION TO SPEECH RECOGNITION IN CARS," in view of USPAPN 20020001389 to Amiri et al. (hereafter as Amiri).

26. Regarding Claim 6, Nagai does not expressly disclose said prescribed apparatus is a image pick-up device; and said directional controller controls image pick-up direction of said image pick-up device based on the detection result of said voice direction detector. Amiri discloses an apparatus for locating a talker, in which a position estimate is used by a steering device, wherein the steering device is a image tracking algorithm to track the image of the sound source (abstract; Fig. 1; page 2, paragraphs 0018-0019). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Nagai with the teaching of Amiri to have a position estimate is used by a steering device, wherein the steering device is a image tracking algorithm to track the image of the sound source (i.e. said prescribed apparatus is a image pick-up device; and said directional controller controls image pick-up direction of said image pick-up device based on the detection result of said voice direction detector).

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

USPN 20030063759 to Brennan et al discloses a directional audio signal processing using an oversampled filterbank.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey P. Chau whose telephone number is (571)272-7514. The examiner can normally be reached on Monday - Friday 9:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

January 7, 2007
CPC

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1/8/07